

ABSTRACT

An anti-reflective coating film is formed by applying on a chemically amplified photoresist film an anti-reflective coating composition comprising an alkali-soluble fluorine-containing polymer, an acid, an amine and a solvent capable of dissolving these components and having a pH of 7 or less. The formed anti-reflective coating film can serve to prevent multiple reflections within the photoresist film, increase the amount of reduction in thickness of the photoresist film upon development with a developer after exposure, and form a pattern having a rectangular cross-sectional pattern and not having T-top or round top.